

# Editorials

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## An Exemplary Performance

ELSEWHERE IN THIS ISSUE there appears a report of a critical appraisal of what its proponents have termed "clinical ecology." The Scientific Board of the California Medical Association created a distinguished task force to do this appraisal. This was done in response to repeated requests from some clinical ecologists who wished to have the California Medical Association consider the evidence justifying their diagnostic and treatment methods.

It is not the purpose of this editorial to comment on clinical ecology, those who engage in its practice or the findings of the task force. Rather the purpose is to call attention to the process the task force used to examine this sensitive subject, and how by this means it developed the conclusions and recommendations. The report was approved by the full Scientific Board as it was submitted, and subsequently endorsed by the governing Council of the California Medical Association.

This critical appraisal is published here in the hope that the method and the process it describes may somehow serve as a generic model for others who may need to do critical appraisals of the scientific validity of what physicians (and sometimes other "health care providers") may on occasion advocate. Dr Wiederholt and the other members of the task force are to be complimented for the scientific criteria they used and for the thoroughness with which they studied all the evidence made available to them on this subject. They are to be commended for an exemplary performance.

MSMW

## Treatment of Bacteremia

DRS JACOBSON AND YOUNG in this issue of the journal have reviewed "new developments in the treatment of Gram-negative bacteremia," which is, indeed, "one of the major current in-hospital infectious problems." Gram-negative bacteremia requires prompt therapy both to eliminate bacteremia and to reverse the metabolic alterations which may proceed to cause septic shock and death even when the microbes in the blood have been controlled by antibiotics. I am pleased to be asked to comment on this important problem.

The authors acknowledge that while "many signs and symptoms of nosocomial Gram-negative bacteremia are similar to those seen in Gram-positive bacteremia and fungemia," they state that it is "best to view [Gram-negative bacteremia] as a distinct clinical entity." Unfortunately, there is nothing distinctive about the syndrome of septicemia produced by Gram-negative bacteria when compared with episodes produced by Gram-positive bacteria or fungi (especially yeasts): both can also produce the syndrome of septicemia and shock. The clinical manifestations of septicemia are well described, and the authors do state that the clinical features of Gram-negative and Gram-positive infections are "similar." In my opinion, the crucial clinical point is to recognize who may have sepsis; one worries later about the specific causative microbe. Initiation of broad empiric

therapy is the key to having any chance of success with a septicemic patient.

While most patients with sepsis present with fever, some may present in more subtle and confusing ways. As pointed out, from 15% to 20% of bacteremic patients are either afebrile or *hypothermic*. Hypothermia, therefore, should promptly trigger an evaluation and therapy for presumed sepsis. In an afebrile patient, confusion, tachypnea, unexplained hypotension and a variety of dermal manifestations (from frank *ecthyma gangrenosum* or purpura to a few petechiae) may be the only symptoms or signs of septicemia. Not commonly appreciated is the fact that the increased capillary leakage during bacteremia, caused by endothelial cell damage, can result in pronounced edema formation; thus, a patient with progressive edema of indeterminant cause should also be evaluated and treated for the possibility of occult septicemia.<sup>1</sup>

The therapeutic approach is well outlined by the authors. The first priority is "to maintain adequate tissue perfusion with volume replacement" while, of course, quickly but thoroughly evaluating the patient, seeking the primary septic focus, culturing blood and other body fomites and then initiating broad, empiric antibiotic therapy. The type of volume replacement to be used is a matter of controversy not addressed by the authors. Isotonic crystalloid solutions may be used initially and certainly will transiently increase plasma volume and cardiac output. There is a growing consensus, however, that colloid-containing solutions are best for volume replacement in severely septic patients. Colloid solutions seem to be more effective than crystalloids in expanding plasma volume, and there is no evidence that they are harmful.<sup>2</sup> Studies need to be done to define more precisely the situations in which and patient groups in whom colloid solutions do a better job than crystalloid solutions, especially since colloid solutions are more expensive.

The use of corticosteroids is well discussed by the authors, but they fall short of a formal recommendation. My own feelings on the matter have recently been published.<sup>3</sup> To summarize, there are overwhelming animal data showing that early, very high doses (at least 30 mg per kg of body weight of methylprednisolone sodium succinate [MPSS]) administered over a few hours prevent shock either from an infusion of purified endotoxin or of live whole Gram-negative organisms. Clinical studies are available, and are well reviewed by Jacobson and Young, showing that survival in humans is prolonged and that mortality is probably reduced by high-dose corticosteroid administration. Thus, I recommend that following recognition and evaluation of the septic-appearing patient, volume replacement and antibiotic therapy should, of course, be promptly instituted. *Adequate* replacement of volume alone will hemodynamically stabilize most patients: adequacy of volume replacement can be difficult to assess, and the use of invasive hemodynamic monitoring may be required. Patients who remain unstable—that is, severely orthostatic or with frank hypotension, confusion or tachypnea,